

AMENDMENT TO THE SPECIFICATION

Please replace the paragraph on page 2, lines 3-8 with the following:

Other systems attempt to enhance the speech signal using a ~~Weiner~~-Wiener filter to filter out the noise in the speech signal. In such systems, the gain of the ~~Weiner~~-Wiener filter is generally based on a signal-to-noise ratio. To arrive at the proper gain value, the level of the noise in the signal must be determined.

Please replace the paragraph on page 15, line 22 - page 16, line 10 with the following:

The smoothed spectral values for the estimate of the clean speech signal and the estimate of the noise are then used to determine the gain for a ~~Weiner~~-Wiener filter 326 at step 422. Under one embodiment, the gain of the Wiener~~Weiner~~ filter is set as:

$$|H(t, f)| = \frac{|\hat{P}_x(t, f)|^2 + (1 - \alpha) |\hat{P}_n(t, f)|^2}{|\hat{P}_x(t, f)|^2 + |\hat{P}_n(t, f)|^2} \quad \text{EQ. 3}$$

where $|H(t, f)|$ is the gain of the ~~Weiner~~-Wiener filter, $|\hat{P}_x(t, f)|^2$ is the power spectrum of the clean speech estimate, $|\hat{P}_n(t, f)|^2$ is the power spectrum of the noise estimate, and α is factor that avoids over estimation of the noise spectra. Values for α vary from .6 to .95 according to the local SNR computed from the ratio of $|\hat{P}_x(t, f)|^2$ to $|\hat{P}_n(t, f)|^2$. t and f are time and frequency indices, respectively. If the Mel-Scale filter bank was used, f is the indices of the filter bank.

Please replace the paragraph on page 16, line 22 - page 17, line 4 with the following:

Once the filter gain has been determined at step 422, the power spectrum of the noisy frequency domain values produced by magnitude block 305 or Mel-Scale filter bank 306 is applied to the ~~Weiner~~-Wiener filter at step 424 to produce a filtered clean speech power spectrum. Specifically:

$$|\tilde{P}_x(t, f)|^2 = |P_y(t, f)|^2 \cdot |H(t, f)| \quad \text{EQ. 4}$$

where $|H(t, f)|$ is the gain of the ~~Weiner~~-Wiener filter, $|\tilde{P}_x(t, f)|^2$ is the filtered clean speech power spectrum, and $|P_y(t, f)|^2$ is the power spectrum of the noisy speech signal.

Please replace the paragraph on page 18, lines 9 - 14 with the following:

Before using this model to enhance speech, it is necessary to add a prior model for speech, Λ_x , and a prior model for noise, Λ_n . Under one embodiment of the present invention, the prior model for speech is a Gaussian mixture ~~model~~model, and the prior model for noise is a single Gaussian component: